

282	<b>WITH NONLIQUID CLEANING MEANS FOR SEPARATING MEDIA</b>	304	..Filter manipulation, shaking or flexing for precluding or removing encrustation
282.1	..Having insulation	305	...Attendant actuated manipulating means
282.2	..With heating or cooling means	306	<b>AIRCRAFT ANTI-INGESTION MEANS (E.G., AIRCRAFT DEBRIS GUARD)</b>
282.3	..Residue burned	307	<b>FILTER OR APERTURED DEFLECTOR UNIT DISCONTINUOUS ACROSS GAS FLOW WITHIN FLOW CONDUIT</b>
282.4	..Two confined fluids in indirect contact	308	..Multiple members serially spaced in flow conduit
282.5	...Heat exchanger is part of separator or is contiguous therewith	309	<b>WITH SEPARATING MEDIA BYPASS OR SYSTEM GAS PRESSURE RELIEF (E.G., RUPTURABLE OR DEFORMABLE)</b>
283	..With automatic control of cleaning means	309.1	..With heating or cooling means
284	..With sequential cleaning of plural units	310	..Pressure relief means to or from atmosphere
285	..Ferris wheel type filter unit arrangement	311	..Relief means is downstream of media (e.g., ambient air bypasses filter)
286	..With gas flow arresting means	312	..Valved bypass means
287	...Interconnected with cleaning means	313	..Gas force responsive
288	..Interdependent or interoperated gas flow cutoff or apparatus shutdown and media cleaning	314	..Shunt means for total flow
289	..Interdigitated comb and separating media	315	<b>PLURAL SERIAL BASICALLY DIVERSE SEPARATING MEDIA</b>
290	..For moving indefinite or continuous length separating media	315.1	..With heating or cooling means or having insulation
291	..Plural diverse cleaning means	315.2	..Heat exchanger is part of separator or is contiguous therewith
292	..Sonic type	317	..At least one mounted for continuous motion
293	..With separating media pneumatically vibrated or flexed	318	..Plural stages in unitary casing
294	..Relatively movable pneumatic nozzle (e.g., scanning nozzle)	319	..Including expansion chamber
295	..Solid agent cleaning member movingly contacts apparatus	320	..Deflector and fibrous, filamentary, particulate solids, or cohesive sheet filter type
296	..Agent has defined traversing motion relative to separating media	321	...Multiple of one type in series of parallel in flow path
297	...With motion effecting means interrelated with separating operation	322	....Serially spaced with at least one of other type intermediately positioned
298	....Gas flow actuates member	323	....Filters
299	...With resulting flexing or distortion of resilient or collapsible separating media	324	.....In parallel
300	..Vibrating, jarring, or rapping means	325	....Serially spaced deflectors
301	..Cohesive filter media cleaning	326	.....With connected trough or channel
302	..Pneumatic reverse flushing	327	...Filter is most upstream
303	...Draft diverted from one side of filter to other	328	...Movable or movable mounted for adjustment or nonuse

- 329 ...Filamentary brush type or fibrous mass
- 330 ....Tubular or annular for radial gas flow
- 331 ...Conical deflector with curved or parabolic radially extending wide downstream end
- 332 ...Cohesive sheet-like filter
- 333 ....Multiple contiguous layers or coils with radial gas flow
- 334 ....Bag type
- 335 .....Including imperforate upstream bag end deflector
- 336 ....Conical
- 337 ....Cyclone or centrifugal whirl type deflector
- 338 **WITH RECYCLE MEANS**
- 338.1 .With heating or cooling means
- 339 .For concentrate entrained in effluent gas outlet means
- 340 ..Return conduit is external of apparatus
- 341.1 **MULTIPLE BAG TYPE FILTERS IN CHAMBER**
- 341.11 .With heating or cooling means or having insulation
- 341.2 .Gas flow from inside to outside of filter
- 341.3 ..Modular compartments
- 341.4 ..Horizontally mounted filters
- 341.5 .Modular compartments
- 341.6 .Partitioned bag filter chamber
- 341.7 .Horizontally mounted filters
- 342 **MULTIPLE SEPARATORS, EACH WITH DISCRETE AND LONGITUDINALLY CONFINED GAS INLET OR OUTLET FLOW PATH**
- 342.1 .With heating or cooling means or having insulation
- 342.2 ..Heat exchanger is part of separator or is contiguous therewith
- 343 .Combined serial and parallel arrangement
- 344 .With flow equalizing, controlling, or distributing means
- 345 .Centrifugal
- 346 ..Parallel
- 347 ...Gas inlet and outlet at linearly opposite ends of separating zone
- 348 ...Plural gas inflow openings, slots, or whirl vanes in each separator
- 349 ...Tangential inlet to each separator
- 350.1 .Filters
- 351 **WITH MEANS FOR ADVANCING CLEAN PORTIONS OF CONTINUOUS OR INDEFINITE LENGTH SEPARATING MEDIA INTO GAS STREAM**
- 352 .Advancing means initiated by flow, pressure, or pressure differential of gas
- 353 .Multiple distinct units
- 354 .Indefinite or running length
- 355 **WITH LIQUID TRAP SEAL OR VALVE**
- 356 **WITH MEANS FACILITATING TRANSPORTABILITY OR HANDLING OF APPARATUS**
- 357 .Handle feature for apparatus or part thereof
- 358 **WITH GROUND SUPPORT MEANS (NONFLOW CONDUCTING)**
- 359 **WITH PORTION OF COVER REMOVABLE**
- 360 **WITH ELECTRICAL GROUNDING MEANS**
- 361 **FLEXIBLE OR COLLAPSIBLE BAG TYPE**
- 362 .With bag ejecting means
- 363 .Toroidal or annular bag
- 364 .Impervious bag with pervious portion
- 365 .Bag carried strain relief means between bag supports
- 366 .With separable nonfiltering residue container
- 367 .Valved, self-closing, or apparatus contained bag closing means
- 368 .Spaced interior inflow path or with means modifying gas flow in bag
- 369 .Closure means other than coupler to flow line for filter or cover bag
- 370 ..Use position residue removal means
- 371 ...Inner filter bag removal
- 372 .With additional nonbag type filter
- 373 .Housing closure secures bag
- 374 .With flow line coupling means
- 375 ..Flexible conduit joins line to bag
- 376 ..Coupling part inseparable from bag

377	...Resilient or expansible	408	..Separated gas conducted axially through rotating member
378	.With securing or supporting means	409	...Hollow shaft
379	..Bag internally supported	410	<b>WITH SEPARATED GAS OUTFLOW CONTROL (E.G., APERTURED CONDUIT)</b>
380	.Nested bags or folded wall with spaced or unsecured faces	410.1	.With heating or cooling means
381	.Seaming, reinforcing or bag structure	411	.Movable gas outlet conduit
382	..Multi-ply, strata, or laminated	412	..Longitudinal
383	<b>WITH REMOTE FAN OR PUMP AND UNCONFINED FLOW TO SEPARATOR</b>	413	.Baffle or flow guide
385.1	<b>COMBINED OR CONVERTIBLE</b>	414	..Within or downstream of gas outlet conduit
385.2	.In environmental air enclosure	415	...Movable baffle of flow guide
385.3	.In motor vehicle	416	...Flow straightener
385.4	.In vented container	417	.Valve
385.5	.Involving mining or metallurgical apparatus	418	<b>WITH INFLOW GAS CONTROL OR DISTRIBUTION</b>
385.6	.Involving communication receiving or transmitting apparatus	418.1	.With heating or cooling means or having insulation
385.7	.Involving shielding apparatus	419	.Multiple inlets
385.8	.Involving ash tray	420	.Check valve
391	<b>RESTRICTED ANNULAR MIXTURE INLET TO COLLECTOR ZONE AROUND GAS OUTLET CONDUIT ATTACHED BAFFLE</b>	421	<b>WITH MEANS FOR LIQUID SEPARATION</b>
392	<b>WITH GUIDE MEANS EFFECTING REMOVAL OF CONSTITUENT LAYER OUT OF GAS STREAM</b>	422	<b>SEPARATING MEDIA ADJUSTABLE TO VARIOUS POSITIONS OF USE OR TO NONUSE</b>
392.1	.With heating or cooling means	423	<b>MEANS WITHIN GAS STREAM FOR CONDUCTING CONCENTRATE TO COLLECTOR</b>
393	.Movably mounted for adjustment	424	<b>WITH CONCENTRATE BACKFLOW OR RE-ENTRAINMENT PREVENTING MEANS</b>
394	.At escape means for heavier constituent	425	.Closure between separating and collecting zones
395	..And separable residue receptacle	426	.Baffle intermediate concentrate collector zone and gas outlet conduit
396	..Annular outlet around gas outflow path	427	..Adjustably mounted
397	..Spaced, overlapped walls	428	<b>RESIDUE ACCESS, HANDLING OR REMOVING MEANS</b>
398	..Plural, angularly spaced	428.1	.With heating or cooling means
399	.Spiral guide	429	.Separable collection container
400	<b>MOUNTED OR SUPPORTED FOR CONTINUOUS MOTION</b>	430	.With means effecting or assisting discharge of residue (e.g., endless belt)
401	.Plural distinct separating media or stages	431	..Gaseous or liquid
402	..Overlapping moving separators	432	.With movable or manipulable means controlling escape of residue
403	..Plural moving separators serially arranged	433	..Manually actuated
404	.Moved by system fluid in confined flow path	434	<b>DEFLECTOR</b>
405	..Fluid flow normal to axis of moving member	434.1	.Having insulation
406	.Differentially deflected system fluid constituents	434.2	.With heating or cooling means
407	..Concentrate flow groove, guide, or channel on moving member	434.3	..Two confined fluids in indirect contact

- 434.4 ...Heat exchanger is part of separator or is contiguous therewith
- 435 ..Wear liners or surface characteristics (e.g., anti-erosion)
- 436 ..Removably supported deflector surface
- 437 ..With gas pump or fan
- 438 ..Within separator
- 439 ..Downstream of separator
- 440 ..Parallel and continuous nonplanar members (e.g., crimped, corrugated, curved)
- 441 ..Concentric, nested conduits with closed and open ends for flow reversal
- 442 ..Plural deflectors overlapped and spaced serially in gas flow
- 443 ..Plural deflectors in row across gas flow
- 444 ...Deflectors in alternate rows aligned (i.e., staggered)
- 445 ..Deflectors apertured or closely spaced from flow path wall
- 446 ...Space or aperture opposed by solid deflector surface
- 447 ..Fixed gas whirler or rotator means
- 448 ..With outlet gas conduit wall common to surrounding gas inlet or concentrate outlet or collector
- 449 ...Gas inlet and outlet have common wall
- 450 ...With outlet from collector
- 451 ....Tangential outlet pipe
- 452 ..With plural concentrate outlets in arcuate, axially extending whirl chamber wall
- 453 ..With concentrate outlet means in one of parallel plates mounting spaced whirler vanes
- 454 ..With tangential concentrate outlet pipe
- 455 ..Plural nonradial gas passages in peripheral wall (e.g., tuyere)
- 456 ..Helical vane or baffle within flow conduit
- 457 ...Between gas flow path wall and central core
- 458 ..Inflow pipe projects within casing
- 459.1 ..Tangential gas inlet opening in casing
- 459.2 ...Inclined inflow
- 459.3 ...Scroll
- 459.4 ...Inflow nozzle or vane
- 459.5 ...Varying inlet area
- 460 ...With tangential gas outlet
- 461 ..Continuous confined flow path
- 462 ..Impingement baffle
- 463 ..Conical with apex facing upstream
- 464 ..Corrugated, ribbed, crimped, or with projections
- 465 ..Planar
- 466 **WITH SEPARATED NONGASEOUS MATERIAL CONDUCTING OR TREATING MEANS**
- 467 **WITH GAS FLOW EFFECTING MEANS**
- 467.1 ..With heating or cooling means
- 468 ..Injector or jet pump type
- 469 ..Manual, weight, or traction operated gas pump
- 470 ..Plurality of impellers arranged in parallel or performing diverse functions
- 471 ..Impeller within or proximate to space encompassed by separating media
- 472 ..Upright or multichambered casing
- 473 ..Impeller upstream of separating media
- 474 **WITH PARTICULATE SOLIDS MOVEMENT DURING USE OR AGITATING MEANS THEREFOR**
- 475 **WITH MEANS ADJUSTABLE TO CONTROL COMPACTNESS OF SEPARATING MEDIA**
- 476 **WITH MEANS INTRODUCING GAS INTO MIDST OF SEPARATING MEDIA**
- 477 **STRANDS OR BRISTLES WITH UNSUPPORTED OR FREE EXTREMITIES (E.G., BRUSH TYPE)**
- 478 **WITH SEPARATE FLOW LINE ACCESS MEANS OR FILTER MEDIA PASSAGE MEANS OFFSET TO FLOW PATH**
- 479 ..For discrete filter particles
- 480 ..Access means is clamping or coupling means for unit filter media
- 481 ..Unit transversely slidable through flow path
- 482 **TWO OR MORE SEPARATORS (E.G., SPACED FILTERS IN FLOW LINE OR CASING)**
- 482.1 ..With heating or cooling means

483 .With framework for edge to edge relation  
 484 .Spaced for parallel flow of gas  
 485 .Three or more serially spaced  
 486 .Plies or layers of different characteristics or orientation  
 487 ..Differing mesh sizes  
 488 ..Variation in shape or size  
 489 ..Orientation of elements  
 490 **WITH MEANS SECURING OR RETAINING SEPARATING MEDIA**  
 490.1 .With heating or cooling means  
 490.2 ..Two confined fluids in indirect contact  
 491 .Fastening means pierces or penetrates media  
 492 .Internal frame or support means  
 493 .Hinged or pivoted retainer or clamp on backing frame or in flow line  
 494 .Grid or tray type for bottom support only  
 495 .Unit or cohesive sheet-like media in flow line or frame  
 496 ..With adjustable connector or size adjusting means  
 497 ..Edge supporting or securing means for nonplanar sheet form filter (e.g., zigzag)  
 498 ...Spiral or cylindrical  
 499 ...With additional transversely arranged members  
 500 ..Flexible sheet type maintained in nonplanar configuration  
 501 ..With additional support means not positively engaged or joined to media (e.g., across face of filter)  
 502 ..Gasket or sealing means  
 503 ..Media within joinable or separable flow line sections  
 504 ..Aligned stop, media and removable retainer  
 505 ..Flow line end coupling (e.g., pipe end)  
 506 ...Flange or track on flow line for slidably retaining media  
 507 ...Resilient attaching means  
 508 ..Suspended or supported by bracket or from top of frame  
 509 ..Distorted media in flow line or resilient retaining means

510 ..Annular unit held between dished or plate-like end members for top and bottom support  
 511 ..Edge supported or secured only  
 512 .Discrete fibrous or particulate solids  
 513 ..Resilient securing means  
 514 ..Fused or bonded to a supporting or backing member  
 515 ..Foraminous container  
 516 ..Held between openwork  
 517 ...Between telescoped or nonplanar retainers  
 518 ...Between perforated plates  
 519 ...Between reticulated end closures  
 520 **SPIRAL FILTER MEDIA**  
 521 **ZIGZAG, CORRUGATED, OR CONICAL**  
 522 **SPECIFIC MEDIA MATERIAL**  
 523 .Ceramic or sintered  
 524 .With coating, impregnant, or bonding agent  
 525 .Metal mesh or expanded material  
 526 ..Wadded or compressed  
 527 .Fibrous or strand form  
 528 ..Organic (e.g., vegetable)  
 529 **MISCELLANEOUS (E.G., SHAPES)**

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 DIG 2 VACUUM CLEANER BAGS  
 DIG 3 VACUUM CLEANER  
 DIG 5 METHODS OF MAKING FILTER  
 DIG 6 MAGNETIC COUPLINGS  
 DIG 7 BLACK LIQUOR TREATMENT  
 DIG 8 BUILT-IN VACUUM CLEANERS  
 DIG 9 RADIOACTIVE FILTERS  
 DIG 10 RESIDUE BURNED  
 DIG 12 POCKET TYPE FILTER  
 DIG 13 POLYURETHANE FILTERS  
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 DIG 15 COLD TRAPS  
 DIG 17 COMPRESSED AIR WATER REMOVAL  
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